REMARKS

Present Claim 1 is drawn to beads of expandable vinylaromatic polymers. The claimed beads "consist of" (a) a polymeric matrix, (b) an expanding agent englobed in the polymeric matrix, and (c) an anti-lumping additive distributed only on the surface of the beads. The claimed beads must include the three components explicitly recited in the claims; namely, a polymeric matrix, an expanding agent and an anti-lumping agent present only the surface of the beads. The transitional phrase "consisting of" signals a closed claim meaning that the claimed beads must include at least components (a), (b), and (c), other non-recited components are excluded. For example, an anti-lumping additive dispersed or englobed inside the beads is excluded from Claim 1.

The Office rejected the claims as obvious over Nonweiler (US 3,457,205) in combination with Bardman (US 2003/0018103). The Office asserts that Nonweiler discloses a composition including the components (a), (b), and (c) recited in present Claim 1. Applicants submit that the Office's assertion in this regard is not correct.

The Office cites to column 4, line 5 as evidence that the Nonweiler composition may include an organic or inorganic pigment. The cited disclosure of Nonweiler is reproduced below for convenience:

> To produce colored articles according to the invention, there may be optionally added from 0.2-2 percent by weight, based on weight of the beads, of an organic or inorganic pigment.

No where in the disclosure cited by the Office is it disclosed or suggested that the organic or inorganic pigment of Nonweiler is present only on the surface of the beads. In fact the above-quoted disclosure refers to the composition of articles made from beads, not beads.

Moreover, as pointed out by Applicants in the Amendment filed in the present case on June 23, 2008, the compositions of Nonweiler further include a component that is excluded from the presently claimed invention. The paragraph bridging columns 1 and 2 of Nonweiler

makes it clear that the Nonweiler composition includes a non-expandable thermoplastic resin powder. The Nonweiler compositions are excluded from the presently claimed invention. The Office failed to provide any reason why one of skill in the art would modify the Nonweiler compositions to exclude the non-expandable thermoplastic resin. The rejection is thus not supportable and should be withdrawn.

The Office responded to Applicants' June 23 arguments by stating that the Nonweiler "thermoplastic resin powder is not a part of the beads, but part of a composition" (see the last paragraph on page 6 of the September 10 Office Action). The Office then argued that the "consisting of" limitation of Claim 1 is not applicable to Nonweiler. Nonsense. Independent Claim 1 explicitly limits the claimed beads to including only those components (a), (b), and (c). It is an explicit limitation of independent Claim 1 that component (c) is distributed only on the surface of the beads. The beads of the presently claimed invention must include the anti-lumping component that is present only on the surface of the beads. Other components distributed on the surface of the beads are excluded. The thermoplastic resin powder is excluded because Claim 1 permits the only the thermoplastic resin powder on the surface of the beads.

Under the Office's erroneous interpretation of Claim 1, the anti-lumping additive (c) would be excluded from the presently claimed invention irrespective of the fact that it is explicitly recited in the claim. Such an interpretation is nonsense in view of the fact that Claim 1 explicitly requires the inclusion of the anti-lumping additive and further explicitly requires its presence only on the surface of the additive.

As explained above Claim 1 excludes the non-expandable thermoplastic powder of Nonweiler. Claim 1 permits the inclusion of only three components (a), (b), and (c), irrespective whether the components are englobed within the beads or on the surface of the beads. The thermoplastic powder of Nonweiler may be present on the surface of the beads in

violation of Claim 1 and thus the Nonweiler compositions are excluded from the claimed invention. This aspect of the Nonweiler composition is also demonstrated in the Nonweiler examples. Where mixtures that include beads of an expandable material are disclosed, such mixtures include components excluded by the "consisting of" transitional phrase of the present claims.

Likewise with respect to Bardman, the cited art, at best, discloses the presence of a component such as the Fe-containing material recited in the present claims only in embodiments where such components are englobed and/or encapsulated in a polymer matrix. As already explained above, present Claim 1 permits the inclusion of such materials only on the surface of the beads. Claim 1 thus excludes compositions of Nonweiler and Bardman in which an Fe-containing material is present inside (e.g., englobed or dispersed) a polymer matrix.

Applicants thus submit that the rejection of the present claims as obvious over the combination of Nonweiler and Bardman is not supportable and should be withdrawn.

The Office further rejected the amended claims of the June 23 Amendment over the combination of Voss (US 4,772,441) and Ishigaki (US 5,354,618). Applicants submit the rejection is not supportable at least because, as discussed above for the combination of Nonweiler and Bardman, the combination of Voss and Ishigaki violates the "consisting of" transitional phrase of present Claim 1. Applicants further traverse the rejection on the ground that the combination of Voss and Ishigaki is legally not supportable in view of contradictory disclosure in the Voss and Ishigaki references.

The Office appears to be of the opinion that Voss discloses beads of an expandable vinylaromatic polymer that meets all of the requirements of present Claim 1 except for the inclusion of Fe-containing anti-lumping additive. Applicants submit that this is not correct.

The beads disclosed in column 4, line 25 of Voss include components excluded from present Claim 1. The beads are described as follows:

> The block fraction was coated with 0.2 part of a mixture of glycerol monostearate and Zn stearate in a ratio of 6:1. The molding fraction was coated with a 0.5 part of a mixture of the same substances in a ratio of 5:1.

Any beads disclosed in the above-cited disclosure of Voss must include a mixture of a Zn stearate and a glycerol monostearate. Zn stearate and glycerol monostearate are excluded from present Claim 1. This is particularly important with respect to the inclusion of glycerol monostearate because the Office has not demonstrated, and cannot demonstrate, that glycerol monostearate can be used interchangeably with Fe stearate. The above-mentioned beads of Voss are excluded from the present claims because the Voss beads include a component that is excluded from the presently claimed invention, i.e., glycerol monostearate.

Applicants thus submit that the rejection of the present claims over the art cited by the Office is legally not supportable in view of the fact that the cited disclosure is excluded from the claimed invention and further in view of the Office's failure to demonstrate that the components of the cited art excluded from the claimed invention are equivalents of the components recited in the present claims.

Applicants further traverse the rejection on the ground that Voss and Ishigaki disclose mutually exclusive compositions. Applicants point out that Ishigaki does not disclose any expandable beads. In fact, the compositions of Ishigaki are used for conventional injection molding and not for blow molding. Nowhere in Ishigaki is it disclosed or suggested that the Ishigaki compositions are capable of undergoing expansion in a manner to provide a useful product. Applicants submit that those of ordinary skill in the art working with expandable thermoplastic beads would not turn to the disclosure of Ishigaki as inspiration for the inclusion of any particular additive in the Voss compositions for the reason that the

compositions of Ishigaki are used for an entirely different purpose in comparison to the polymers of Voss.

Further still, the compositions of Voss must be styrene based. In fact, Voss discloses:

> For the purposes of the present invention, styrene polymers are polystyrene and copolymers of styrene with other alpha,beta-olefinically unsaturated compounds which contain not less than 50 parts by weight of styrene as copolymerized units.

See column 1, lines 54-57 of Voss.

The Ishigaki compositions are substantially different and are not required to contain at least 50 weight percent of styrene. In fact, the Ishigaki compositions are based on a polyolefin resin that is not a styrene-based resin. In this regard, Ishigaki discloses:

> Examples of the polyolefin resin to be modified include low-density polyethylene, high-density polyethylene, linear low-density polyethylene, polypropylene, ethylene-propylene block copolymers, ethylene-propylene random copolymers, polybutene, and mixtures thereof.

See column 3, lines 47-52 of Ishigaki.

The Office relies on disclosure in column 7 of Ishigaki as proof that the Ishigaki composition may be a styrene-based composition. Applicants submit that this is not correct. The disclosure at column 7 of Ishigaki is in relation to blends of polymers that may make up one component of the Ishigaki composition. Although Ishigaki discloses that one copolymer may contain up to 50% by weight of styrene, this copolymer is only one component of a blend of copolymer rubbers which is further blended with a modified polyolefin resin (i.e., the modified polyolefin resin must be present in amounts of 20-80 parts by weight and the rubber component copolymer rubber must be present in amounts of 80-20 parts by weight (see column 27, lines 7-25 of Ishigaki)).

Applicants submit that the compositions of Voss which must contain at least 50 weight percent of styrene are not encompassed by the compositions of Ishigaki which, at best,

disclose the inclusion of a block copolymer as one portion of the Ishigaki composition and thus do not include styrene in an amount of at least 50 weight percent.

Applicants submit that those of ordinary skill in the art would not have any reason to turn to the disclosure of Ishigaki as a teaching relevant to the expandable compositions of Voss at least for the reasons that (1) the Voss and Ishigaki compositions do not overlap and (2) the Voss compositions are expandable styrene-based compositions whereas the Ishigaki compositions are molding compositions nowhere described to be useful as expandable thermoplastic compositions.

Applicants further traverse the rejection because the Office failed to prove that Ishigaki discloses that Fe-stearate and Zn-stearate materials "can be interchangeably used as antiblocking agents" as alleged on page 5 of the September 10 Office Action. The Office cites to column 8, line 45 as evidence that Ishigaki discloses that an anti-blocking may be added to the Ishigaki thermoplastic compositions. The Office further relies on column 11, line 15 that such an anti-blocking additive includes Fe stearate. Applicants submit this is not correct. In fact, the Fe stearate disclosed in column 11 of Ishigaki is described to be used as an accelerator which accelerates the reaction between hydroxyl and carboxyl groups (see column 10, lines 38-51 and column 11, lines 27-37). Although the Office asserts that the evidence of record shows that Fe stearate and Zn stearate "are art recognized equivalents . . . as antiblocking agents", Applicants submit that Ishigaki nowhere discloses or suggests that iron stearate is an anti-blocking agent. Instead, Ishigaki discloses that iron stearate is an accelerator.

The rejections are thus further not supportable because the Office failed to prove that Zn stearate and Fe stearate are art recognized equivalents as antiblocking agents.

For the reasons discussed above in detail, Applicants submit that the rejections are legally and factually not supportable. Applicants respectfully request withdrawal of the rejections and the allowance of all now-pending claims.

Respectfully submitted,

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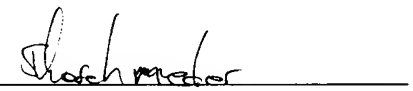

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